

CLAIMS

It is claimed:

1. A method of sending a print job from a computer workstation to one or more printers in a plurality of printers, each of the plurality of printers communicatively coupled to the same control unit, the control unit being communicatively coupled to a computer workstation on a computer network, the method comprising:
- (a) the control unit identifying one or more error-free printers;
 - (b) the control unit polling the error free printers to ascertain a print queue for each printer, the print queue comprising a list of one or more print jobs scheduled to be printed by a printer;
 - (c) the control unit identifying a first printer, the first printer comprising the error-free printer with the lowest quantity of print jobs in its print queue;
 - (d) the control unit routing the print job to the first printer for printing;
 - (e) the control unit monitoring a status of the print job with respect to the first printer;
 - (f) the control unit detecting an error in the first printer with respect to the print job, wherein the error causes the first printer to be unable to complete the print job;
 - (g) the control unit repeating (a) through (c) and identifying an alternate printer, wherein the alternate printer comprises the error-free printer with the lowest quantity of print jobs in its print queue;
 - (h) the control unit deleting the print job from the first printer and rerouting the print job to the alternate printer for printing;
 - (i) if the control unit detects an error in the alternate printer with respect to the print job, the control unit identifying subsequent alternate printers and rerouting the print job to the subsequent alternate printers until the print job is completely printed.

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1 2. The method of sending a print job from a computer workstation to one or more printers in
2 a plurality of printers of claim 1, wherein the Host maintains a Job Move Count record
3 comprising the quantity of times that the Host reroutes the print job, wherein the Host does not
4 reroute the print job if the Job Move Count has reached a predetermined maximum limit.

1 3. The method of sending a print job from a computer workstation to one or more printers in
2 a plurality of printers of claim 1, wherein the print job comprises a single copy of a document.

1 4. The method of sending a print job from a computer workstation to one or more printers in
2 a plurality of printers of claim 1, wherein the print job includes plural copies of a document and
3 further comprising the control unit maintaining a copy count record that indicates the number of
4 copies remaining to be printed, the control unit further keeping track of the number of complete
5 copies of the document that are printed by the printers.

6 5. The method of sending a print job from a computer workstation to one or more printers in
7 a plurality of printers of claim 1, the method further comprising the control unit receiving a print
8 job from the computer workstation.

1 6. The method of sending a print job from a computer workstation to one or more printers in
2 a plurality of printers of claim 1, the method further comprising the control unit polling the
3 plurality of printers to determine whether any printers are disabled due to the presence of an error
4 in the printer.

1 7. A control unit for instructing a printer to print a document, the control unit including
2 computer readable software for causing the control unit to:

- 3 (a) identify one or more error-free printers;
4 (b) poll the error free printers to ascertain a print queue for each printer, the print
5 queue comprising a list of one or more print jobs scheduled to be printed by a
6 printer;
7 (c) identify a first printer, the first printer comprising the error-free printer with the
8 lowest quantity of print jobs in its print queue;
9 (d) rout the print job to the first printer for printing;
10 (e) monitor a status of the print job with respect to the first printer;
11 (f) detect an error in the first printer with respect to the print job, wherein the error
12 causes the first printer to be unable to print the print job;
13 (g) repeat (a) through (c) and identify an alternate printer, wherein the alternate
14 printer comprises the error-free printer with the lowest quantity of print jobs in its
15 print queue;
16 (h) delete the print job from the first printer and rerouting the print job to the alternate
17 printer for printing;
18 (i) if the control unit detects an error in the alternate printer with respect to the print
19 job, identify subsequent alternate printers and rerouting the print job to the
20 subsequent alternate printers until the print job is completely printed.

1 8. The control unit of claim 7, wherein the computer readable software further causes the
2 control unit to maintain a Job Move Count record comprising the quantity of times that the
3 control reroutes the print job, and wherein the control unit does not reroute the print job if the
4 Job Move Count has reached a predetermined maximum limit.

1 9. The control unit of claim 7, wherein the print job comprises a single copy of a document.

1 10. The control unit of claim 7, wherein the print job includes plural copies of a document
2 and wherein the computer readable software further causes the control unit to maintain a copy
3 count record that indicates the number of copies remaining to be printed, and to keep track of the
4 number of complete copies of the document that are printed by the printers.

1 11. The control unit of claim 7, wherein the computer readable software further causes the
2 control unit to receive a print job from the computer workstation.

1 12. The control unit of claim 7, wherein the computer readable software further causes the
2 control unit to poll the plurality of printers to determine whether any printers are disabled due to
3 the presence of an error in the printer.

1 13. A method of sending a print job to one or more printers in a plurality of printers, each of
2 the plurality of printers communicatively coupled to the same control unit, the method
3 comprising:

- 4 (a) the control unit identifying plural printers eligible to receive the print job, wherein
5 the print job comprises plural copies of a document;
6 (b) the control unit allocating the plural copies of the document among the identified
7 printers comprising the control unit assigning each of the identified printers with
8 the task of printing at least one copy of the document;
9 (c) the control unit keeping track of how many copies of the document are printed by
10 each of the identified printers
11 (d) the control unit determining that a first printer includes an error that renders the
12 printer unable to continue printing additional copies of the document;

13 (e) the control unit reallocating the remaining unprinted copies of the document in the
14 print job among error-free printers.

1 14. The method of sending a print job to one or more printers in a plurality of printers of
2 claim 13, the method further comprising the control unit receiving the print job from the
3 computer workstation.

1 15. The method of sending a print job to one or more printers in a plurality of printers of
2 claim 13, the control unit determining the first printer no longer includes an error and the control
3 unit reallocating the remaining, unprinted copies of the document in the print job among the
4 plural print jobs.

1 16. A method of monitoring a print job being printed by a plurality of printers, each of the
2 plurality of printers communicatively coupled to the same control unit, the print job comprising
3 plural copies of a document, the method comprising:

4 (a) the control unit keeping track of an assignment count for each of the printers, the
5 assignment count comprising the number of copies of the document that remain to
6 be printed by a printer;

7 (b) the control unit determining that a first printer has more copies of the document
8 remaining to be printed than a second printer;

9 (c) the control unit decreasing the assignment count of the first printer by a first
10 amount and increasing the assignment of the second printer by the first amount.

1 17. The method of claim 16, additionally comprising the control unit determining that a first
2 printer is unable to continue printing copies of the document.

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1 18. The method of claim 17, additionally comprising the control unit setting the assignment
2 count of the first printer to zero and readjusting the assignment count remaining, error-free
3 printers.

1 19. A method of monitoring a print job being printed by a first printer and a second printer,
2 each of the first and second printers communicatively coupled to the same control unit, the print
3 job comprising plural copies of a document, the method comprising:

- 4 (a) the control unit keeping track of an assignment count for each of the printers, the
5 assignment count comprising the number of copies of the document that remain to
6 be printed by a respective printer;
- 7 (b) the control unit determining that the first printer is printing at a slower speed than
8 the second printer;
- 9 (c) the control unit increasing the assignment count of the second printer and
10 decreasing the assignment count of the first printer in order to compensate for the
11 slower printing speed of the first printer.

1 20. The method of claim 19, additionally comprising the control unit determining that the
2 first printer is unable to continue printing copies of the document in the print job, and the control
3 unit setting the assignment count of the first printer to zero.

1 21. The method of claim 20, additionally comprising the control unit adjusting the
2 assignment count of the second printer so that the second printer is assigned the task of printing
3 the number of copies of the document that remained to be printed by the first printer.